

*Original MS. in the
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ART. III.—*Report of Twenty-five Cases of Urinary Calculus, in Twenty-three of which the Bi-lateral Operation was Performed.* By PAUL F. EVE, M. D., Professor of Surgery in the Nashville University, Tennessee.

AMONG the committees appointed at the last meeting of the American Medical Association, was one to collect the statistics of the operation for the removal of stone in the bladder. In October, 1841, I first performed lithotomy; since then, a period of eleven and a half years, I have operated upon twenty-four cases of urinary calculus; nine of them within twelve months, four in Georgia and five in Tennessee. No one will doubt the importance of carefully prepared surgical statistics, and to make mine the more full and authentic, the valuable assistance of Prof. Means and Dr. Barry in the chemical analysis, and of Dr. Juriah Harris with the microscope, has been invoked in the examination of my collection of vesical stones, amounting to about one hundred and forty. In the analytical investigation all proposed was simply the qualitative and not the quantitative composition of these foreign bodies.

The cases are now narrated in the order of their occurrence.

CASE I.—A mulatto boy, eight years old, coming from Lincoln County, Georgia, has had symptoms of stone for some indefinite period. The bi-lateral operation was performed on him in October, 1841, after the method of Dupuytren, with the double lithotome caché. A mulberry calculus, weighing two drachms, was extracted. This is the handsomest specimen of the oxalate of lime formation in my collection. The mulberry-like granulations are small, distinct, and perfect. The wound healed so kindly that on the fourth day after the operation, the patient was considered well; in fact, was out of his room.

This is believed to have been the first time lithotomy was performed in Augusta. As late as 1845, this operation had never been required in Savannah, and had not then been performed a dozen times even in Charleston. Up to the present time, I believe I have cut for stone oftener than all the professional gentlemen that ever lived in these three great southern cities, Augusta, Savannah, and Charleston. So infrequent are calculous cases in this section of our country.

CASE II.—Master H—— was six years old, resided in Baldwin County, Georgia. Irregularity in urinating was observed at twelve months of age, and attributed by his mother to a needle introduced into the urethra, which she thought had passed into the bladder. The bi-lateral operation was performed in May, 1843, and a large stone removed. It was light compared to its size, weighed about four drachms, and is the ammoniaco-magnesian phosphate. This patient had a speedy recovery, having been up and about the room on the fifth day after the operation.

CASE III.—A mulatto boy named Lewis, three years old, labouring under symptoms of stone for several months, was cut with the double lithotome in June, 1843. A calculus of the mulberry variety, weighing a drachm and a half, was extracted. This patient sat up on the fourth, and was well on the eighth day after the operation.

From inquiry specially directed to the subject at the time, this is supposed to be the second case of stone known to have originated in Augusta. The first was taken to New York, several years ago, and operated upon by Dr. Mott.

CASE IV.—This patient also resided in this city, was the son of Mr. S——, aged three years. He was operated upon in October, 1845, by the bi-lateral method; a calculus, measuring two and three-quarters inches in its longitudinal circumference, was removed; and the patient had a speedy recovery. The composition of the deposit in this case is the ammoniaco-magnesian phosphate. There was some hemorrhage during the operation, but fortunately no recurrence after it.

CASE V.—In this instance the stone was removed by crushing during the months of November and December, 1845. Mr. L——, aged thirty-four, came from Early County, Georgia. The calculus measured in diameter over an inch, and was broken up in eighteen sittings by Charrière's make of Heurteloup's instrument. The patient was not confined even to his room during the treatment, suffered no acute pain, passed no blood, and up to the present date continues well. A fragment which seemed to have been the outer layer of the calculus, yielded to chemical reagents, phosphate of lime; but from the resistance offered the lithotriptor, and the physical appearance of other pieces passed *per urethram*, I am inclined to think the central mass to have been the oxalate.

The account of this case, with a notice of the operation of lithotrity and lithotripsy performed in the United States, was published in the *Southern Medical and Surgical Journal* for February, 1846.

CASE VI.—A negro woman, aged twenty-four, married and has borne one child, came from Alabama, and was cut in January, 1846. The calculous formation in this case was evidently the result of an injury to the bladder. Four years before her arrival here, she fell astride a projecting bar, and sustained, no doubt, a fracture of the pelvis. There was great contusion of the external organs of generation; the patient was confined six months to bed, unable to walk; and for a year could not labour. Great difficulty was experienced in micturition, little urine could be retained, and for four months the catamenia had failed. An inch and a half behind the orifice of the urethra, a small object was felt projecting into the vagina, and the sound instantly detected a foreign body in the bladder, apparently filling it.

A vesico-vaginal fistula already existing, in operating, the urethra was laid open to it, and a piece of bone, coated with uric acid, was removed. This was the foreign body which had ulcerated through the bladder into the vagina; was of an irregular shape, and about three-fourths of an inch square. A large, soft, calculous mass felt in the bladder was now scooped out, and then its nucleus, another and larger piece of bone, was seized, but could only be extracted after a second incision made in the soft parts towards the clitoris, and by repeated efforts. Nor was the bladder even yet emptied of foreign matter, for during the treatment, a calculous mass, weighing forty-five grains, was passed through the wound.

The duration of this operation was about an hour, and left the patient quite exhausted. Incontinence of urine, so much to be apprehended after lithotomy in the female, was certainly expected. This, however, she has not only escaped, but has been restored a useful servant to her owner.

The composition of the calculus was uric acid; the nuclei, when sawed in two, presented the cancellated structure of bone, and were reduced by re-agents to animal matter and phosphate of lime.

Remarks.—In reference to the result of incontinence of urine after lithotomy in women, we think a difference will be observed dependent upon the age of the patient. In children this deplorable event will, we think, be found pretty uniformly to follow the operation, while the adult female may escape. This is just what might be expected from the relative development of the organs interested in its performance. We have received the particulars of a case in which the urethra and vagina were freely incised in childhood; this patient lived to become a young lady, but was ever an object of disgust to herself and of pity to her friends; death happily relieved her condition, made worse by lithotomy. One of our pupils, Dr. Groce, of Alabama, has published the case of a married lady, in which he cut immediately upon the stone through the vagina and urethra, and after removing it, was to his great surprise, on being summoned to the same patient, eight days afterwards, called upon to re-open the wound for the purpose of extracting a second calculus; and yet she fully recovered, bore a child, and enjoyed unusual health. And in the case suggesting these remarks, the recovery has been equally good, notwithstanding the free incisions made into the soft parts under very unfavourable circumstances.

CASE VII.—Dr. R——, when about twenty years old, and living then in Henry County, Georgia, was relieved by lithotomy, in April, 1847. He had

laboured under symptoms of stone for several years. The operation was the bi-lateral. The patient refused to inhale ether or to submit to the continuance of the operation after it was commenced. It was nevertheless performed, and a small oxalate of lime calculus extracted, weighing only forty-seven grains. The urine resumed its natural course on the eleventh day after the operation, and the patient soon fully recovered. He is now a worthy member of the profession.

Besides operating in this case against the will of the patient, there was another peculiarity. Sounding just preceding its performance by several present, did not reveal the presence of the stone. Having gone the distance of about a hundred and fifty miles, and being confident I had recognized its presence in the bladder a week before, I ventured under the circumstances to attempt its removal, and fortunately succeeded, notwithstanding its very diminutive size.

CASE VIII.—This, too, was a patient twenty years old, having had symptoms of stone from his early youth. Mr. C—— lived in De Kalb County, Georgia, and was cut with the double lithotome in October, 1847. A large mulberry calculus, weighing over an ounce, was broken into two pieces in its extraction. Its outer layer is phosphate of lime. The patient had a speedy recovery.

I have performed lithotomy seventeen times within the past four years upon patients under the influence of chloroform; in none did it exercise other than good effects. I may have been the first to operate for stone in the United States upon a patient under this anæsthetic agent. In all the following cases *chloroform* was alone used, and this *bi-lateral* operation performed.

CASE IX.—Master G——, five years old, has suffered symptoms of calculus for the past four. He resides in Edgefield District, South Carolina, and was operated upon in March, 1848. The urine commenced to flow naturally on the second day after the operation, the wound healed rapidly, and the boy was well in a few days. The size of the stone accurately measured is one and a quarter inches and fifteen sixteenths of an inch in its diameters, but it is light, weighing only three drachms. It is the ammoniaco-magnesian phosphate.

CASE X.—Master P——, a boy five and a half years old, came from the same neighbourhood of the one above, and was cut in May, 1848. He was a seven months child; his mother during gestation had been ill with fever; he was altogether quite puny for his age. Difficult urination occurred from infancy. A calculus, composed as the one above, in weight two drachms and four grains, was removed. On the ninth day the urine resumed altogether its natural channel, and the patient was out in the streets in less than two weeks.

CASE XI.—This is the most interesting and satisfactory of all my cases. One hundred and seventeen calculi were taken from this patient. Mr. O'Bannon, then about fifty years old, lived in South Carolina; had been injured twenty-four years and four months before being operated upon, by a piece of timber in falling striking his spine; soon after this he experienced

difficulty in urinating which continued until relieved in January, 1849. Presenting a crepitating tumour in the perineum, which projected more to the right side than the left, and detecting by the sound, stone in the bladder, this case was operated upon before the class of the Medical College of Georgia, at the date just mentioned. An incision was made as in performing the lateral operation for lithotomy, except it was made to the right, and not to the left of the raphe of the perineum, and fifty-six small calculi extracted through this opening. The grooved staff now introduced into the bladder coming in contact with other foreign bodies in this cavity, the double lithotome for the bilateral section was used, and then sixty-one more stones removed from it with the forceps; making the whole number *one hundred and seventeen*. The largest of these weighed two drachms thirty-eight grains; the two next in size, seventy-eight grains each; and the smallest, one grain; aggregate weight four and a half ounces. They are of a tetrahedral shape, have polished surfaces, are easily fractured, are of a grayish white colour, and composed of phosphate of lime.

Notwithstanding this patient was reduced almost to skin and bones by his long suffering, he yet had an excellent recovery. He sat up a little by the fire on the second day after the operation, changed his room on the fourth day, on the eleventh was out in the yard of the hospital, and by gentle pressure upon the wound, passed all his urine through the urethra. On the eighteenth day from the operation he returned home, a distance of twenty-two miles. Upon inquiry, I am happy to learn he still continues well.

Remarks.—It will be recollected that the largest urinary calculus in the British collection was taken after death (the operation attempted by Cline proving fatal), from Admiral Sir Walter Ogilvie, who was struck in his back by the boom of a vessel when he was twenty-three years old. An injury to the spine, like in my case, seems to have been the cause of its production. This stone weighed forty-four ounces, and measured sixteen and fourteen inches around its axis.

CASE XII.—This was a negro boy coming also from South Carolina, aged six years. Lithotomy was performed upon him before the class of the Medical College of Georgia in February, 1849. The calculus was broken in the effort at extraction. It weighed about two drachms. Its composition is uric acid. This patient returned home within two weeks.

CASE XIII.—In May, 1849, I cut twice for stone. The first case was in Twiggs County, Georgia, and was upon the son of General T——, aged four years. A calculus weighing about a drachm of the mulberry variety was removed from his bladder. During the operation in this case the rectum was punctured, so that gaseous and fluid contents passed through the section made in the perineum, but none of the solid fæces. As chloroform does not prevent the protrusion of this organ while performing lithotomy, I have made a modification in the division of the soft parts by the knife to obviate this accident. This will be described at the close of this article. The puncture of the rectum in this instance was, however, so slight, that the patient was dismissed well on the eleventh day after the operation.

CASE XIV.—The other case operated upon during this month and year, was in Coweta County, Georgia, and the patient a lad aged ten years. Master B—— was from infancy a sufferer with symptoms of stone. The calculus re-

moved is the largest in my collection. It weighed three ounces and one drachm, measuring six inches in one and seven and three quarters in its longest circumference. It may be the largest ever removed at so early an age. Its composition is ammoniaco-magnesian phosphate, but the centre of it was not examined.

The wound in this instance had nearly healed, the patient had suffered nothing special in the region of the bladder, when unfortunately an attack of dysentery, then becoming prevalent in his neighbourhood, destroyed his life. His attending physician wrote me that his death was not attributed to the operation; and again, he writes, March 30, 1852: "I made no post-mortem examination of young B——; I have no doubt, however, that his death was produced by the affection of his bowels."

CASE XV.—In this case lithotomy was performed, but no stone removed. The patient was twelve years old, son of Mr. Z——, of Morgan county, Georgia, and in addition to symptoms of calculus laboured under congenital contraction of the orifice of the urethra. This opening was so small that he had frequent retentions of urine. In June, 1850, in the presence of several professional friends, the orifice of the urethra was enlarged, the sound then introduced into the bladder coming in contact with a foreign body, the bilateral section was made. Owing I presume to continued distension having dilated this organ, it could not be explored with the finger, still a calculus could be reached, but not seized with instruments. I believe others present were as fully satisfied of this as myself, and suspecting the stone to be encysted, the case was at this stage of the operation abandoned to nature.

The wound healed kindly, and in a few days the patient returned home. I have several times since, and again more recently endeavoured to obtain the subsequent history of this case. On March 29th of this year, I learned from a physician related to the family of Mr. Z——, "that the operation was of some temporary benefit. The improvement, however, continued only a few weeks, and the lad is now precisely in the same condition as before it was performed"—that is, has symptoms of stone.

Remarks.—A good deal has been said and some little written in reference to the fact of cutting into the bladder when no stone existed in the case or could not then be found. The possibility of this occurring and without censure to the surgeon must be admitted, however unpleasant the circumstance would be to any one. Within the past six months, in a case of retention of urine, I was fully confident that the catheter revealed a foreign body in the bladder, but which had not been suspected by three other professional gentlemen. In a few days this patient passed the large gravel now in my possession. Agreeable to the principles of surgery, lithotomy might have been a justifiable operation at the time I was called into this case; but there is little doubt this small calculous body would have escaped detection by the finger or forceps introduced into the bladder through a section made into it.

Who need we ask has not failed to detect stone in the bladder when one existed at the very time of the examination; or who has not been deceived in the sensation imparted by the sound? Even with the free, full, and unbiased exercise of all the senses, how fearful are we of committing errors in diagnosis in reference to affections less obscure than those of the bladder? In detect-

ing urinary calculi we are unfortunately limited to two of the perceptive faculties, hence the great liability to mistakes. The distinguished Samuel Cooper, long at the head of surgical literature in Great Britain, declares he knew of at least seven cases, at two of which he was present, where the patients were subjected to lithotomy, and no calculi found in their bladders.

The greater Cooper, Sir Astley, says he has failed to detect anything when others have discovered a calculus. He cut one patient and extracted thirty-seven stones from his bladder, who had been sounded and declared not to have one. In a case in which the urine had been repeatedly drawn off, and no stone could be felt, after the patient's death, fifty-six he states were found in the bladder.

But still more to the point resembling my own case. This celebrated surgeon cut a boy in Guy's Hospital, wherein he supposed the sac of the encysted stone was alone opened, situated as it was between the bladder and rectum, and without wounding either of these organs. This patient recovered. In another case, he found by inspection after death two calculi having large extremities connected by a narrow stem, one extremity of each was situated in a sac, and the other extremity in the cavity of the bladder.

Sir Benjamin Brodie relates a case in which the patient only occasionally suffered symptoms of stone; dying of pleurisy, a perfectly formed cyst was found embracing the calculus; but in such a manner that he suspected this foreign body to have escaped into the general cavity of the bladder only at the periods when he actually experienced the symptoms of cystic irritation.

A curious case is mentioned in a recent Journal, in which at a consultation, I think, of about fifteen surgeons, the question of the presence of stone in the bladder was decided in the affirmative by one vote, and the operation of lithotomy performed. No calculus was found; the patient, an adult; was cured, nevertheless, of all his symptoms, but never once asked to see the foreign body supposed to have been extracted.

Cheselden cut thrice, and found no stone. Roux, the present veteran surgeon of the Hôtel Dieu, has performed lithotomy four times without finding a calculus. Dupuytren acknowledged having done this once; and Dr. Physick was very near doing the same thing. He had no doubt the stone existed, but would not operate because the health of the patient was bad. He died before the preparation for it was completed, and on examination, nothing foreign was found in his bladder. Crosse, the celebrated lithotomist of Norwich, England, admits he cut in one instance a child affected with polypus, and not stone of the bladder; and says, he has notes of not less than eight cases in which surgeons expected to find calculi without doing so. Desault has also committed this error.

Professor Ford of this city sent a case to me in 1849, which was quite similar to the one which has drawn forth these remarks. It was a boy about eighteen months old, whose almost closed orifice of the urethra I enlarged, when a copious gush of urine relieved the distended bladder. Not suspecting

he had symptoms of urinary calculus, he was not sounded. A short time afterwards he was killed by the shaft of a dray falling upon his head, when all that his parents would permit Dr. F. to do, was to feel the stone by the catheter, which he says was unequivocal.

A case of sacculated or encysted calculus is published in the *Monthly Journal of Great Britain* for February 1848, by Prof. James Miller, of Edinburgh. He says: "Again using the forceps, sometimes as a sound and sometimes as forceps, I could make no seizure; often coming in contact with the stone, but never being able to include it in my grasp. I changed the forceps once and again, using different sizes and forms; but with a like want of success." He then requested his friend and colleague, Dr. Duncan, to take his place, but who likewise failed to remove the calculus. This they could feel but not seize, and became satisfied it was firmly grasped and protected by the bladder; either sacculated or encysted, they could not tell which; for it was far from the point of the finger, and could be reached only by the instruments introduced. By repeated efforts the stone was extracted, but the patient died.

I agree with M. Civiale that an examination with lithotritry instruments tends greatly to correct the diagnosis of ordinary sounding the bladder and the exploration by the finger in the rectum.

CASE XVI.—In October, 1850, just before leaving for Louisville, Kentucky, I operated for stone at Midway, near Milledgeville, Georgia, on the son of Mrs. H., aged seven, who had presented evidences of urinary calculus from early childhood. A very rough fusible calculus, the triple phosphate of ammonia, magnesia and lime, was removed, in weight about half an ounce. In ten days after this, the patient was well.

CASE XVII.—Master S., the son of German parents, who settled first in Charleston, South Carolina, where he was born and resided until a year ago. He was sounded in that city, but nothing special elicited. Having returned early in February, 1851, from the West, lithotomy was performed on this patient before several members of the class then in attendance at the Medical College of Georgia. A mulberry calculus weighing about half a drachm was extracted, and the boy returned home to Graniteville, in his State, in a week.

CASE XVIII.—In March, 1851, I operated upon Master J., seven years old, coming from Elbert County, Georgia. His mother states explicitly that when only four days old, she noticed he suffered during micturition. A calculus of uric acid, three drachms in weight was taken from this patient. Hemorrhage occurred during the night after the operation, but was arrested by a female catheter having a linen pocket attached to it, and stuffed with cotton after its introduction through the wound into the bladder. The patient left for home within two weeks.

Remarks.—The calculus in this case was in all probability congenital. The earliest period of life at which we find lithotomy was required, is mentioned by Civiale as occurring at ten weeks old. The result of the operation is not given.

CASE XIX.—The son of a professional brother, Dr. S., in Coweta County, Georgia, was cut in June, 1851. He was seven years old, had two friable calculi, one of which was removed nearly whole, the other after it was broken up. They would weigh about three drachms, and are composed of oxalate of lime nuclei covered with about one-eighth of an inch of phosphate of lime. I have just received a letter in which occurs the sentence: "The condition of Dr. S.'s son is such as you would desire it to be, a perfect cure."

CASE XX.—Up to this number, but one of my patients had died after being operated upon; all had fully recovered with a single exception, and death in that instance was not attributed to lithotomy. But of my remaining cases, that is, of the last six operations, no less than three had a fatal termination.

The first of these was in the person of Mr. T., of De Kalb County, Georgia, aged seventy-seven. He had been afflicted for years with calculous symptoms; for the last ten had daily used a catheter; knew he had a stone in the bladder, for, besides feeling it with his silver catheter, its eyes or openings near the beak would occasionally be plugged with fragments of an urinary concretion, and having endured the extreme of human suffering now demanded, at all hazard, an operation. The usual bi-lateral section was made, but owing to the size of the prostate gland, the bladder could not be explored with the finger. Like, in Case XV., a foreign body could only be felt, but not seized with instruments. After repeated efforts, the fragment of a calculus, size of a rifle-ball, was detached by the scoop; the operation was now discontinued, and the old gentleman died at the end of sixty hours, of course from the direct effects of it.

His family physician, Dr. E. N. Calhoun, fortunately made a *post-mortem* examination, and thus describes the condition of the organ opened in the operation: "After cutting into it (as in the high method for stone), I found the walls of the bladder thickened to the extent of from one-fourth to three-eighths of an inch, and perfectly infiltrated with blood. It contained a large quantity of bloody water, of course very offensive, and there were *three distinct cysts*, each containing quite a number of small calculi. The one sent" (about the size of a partridge egg) "I took from the sac nearest the fundus."

CASE XXI.—This was my first in Tennessee, and was operated upon in November, 1851. Mr. T., aged twenty-four, had suffered calculous symptoms for years, and had recently returned from a visit to California by the Isthmus. He was cut in the presence of several members of the medical class of the Nashville University, and a very rough mulberry calculus, weighing about half an ounce, removed. In physical appearance it resembles very much the one removed thirteen months before, near Milledgeville in this State, but differing widely from it in composition.

The bleeding was rather free after the operation, but a careful examination did not expose any particular vessel from which it proceeded; the blood seemed to be derived from the plexus about the neck of the bladder. It soon ceased to return during the night after the expulsion of a coagulum, when it was permanently arrested, as in Case XVIII., by a female catheter, armed with a linen pocket and stuffed with lint.

This patient was ready for home in less than two weeks.

CASE XXII.—On the 10th of December, 1851, I removed, in Nashville, a calculus from the daughter of Dr. D., of Tennessee, on her fifth birth day. The double lithotome introduced into the bladder touched the foreign body,

it was turned half round as in operating upon the male, the blades expanded, and in withdrawing the instrument as soon as the cutting edges appeared at the mouth of the urethra, these were closed. The object of this peculiar method was to divide the orifice of the urethra to as limited an extent as was possible for the extraction of the stone. Dilatation was now effected, and a calculus measuring nearly three inches in its greatest circumference was removed. Its composition is oxalate of lime.

In thirty-six hours after the operation, the patient was apparently well; the second night, she retained her urine, rising twice to evacuate it; and, on the fifth day, she left the city for home in an open buggy, with the temperature below the freezing point. I learn, subsequently to this, her perfect recovery.

Remarks.—This little girl lived for three years in a calcareous region, where the ordinary drink was strongly impregnated with lime; after this, she used free-stone water, but had an attack of genuine variola, and during convalescence from it, experienced an inordinate thirst for acids, which was freely indulged by allowing her pickles, crab apple cider, &c. She now presented, for the first time, symptoms of urinary calculus. It may be that the alkali and acid, thus introduced into the system, stand in the relation of cause and effect as regards the production of stone in this instance.

CASE XXIII.—A boy, seven years old, son of Mr. G., was brought before the class of the Nashville University, through the kindness of a professional brother, for diagnosis in regard to a vesical affection. He had been sounded without detecting stone; now, one was recognized. He was cut on the 5th of February, 1852, and an oblong calculus, weighing about a drachm and a-half, removed. It is of a dirty-yellowish colour, and oxalate of lime composition.

The wound healed by the first intention. The attending family physician and myself made daily examinations of it, and to our repeated inquiry of the mother who nursed the patient, she gave the invariable answer, there has been no discharge from the cut in the perineum. The boy sat up in three days after the operation; took one dose of opening medicine, in a week was running about, and presented again to the class sound and well.

CASE XXIV.—During the same month (February), lithotomy was again performed before the class of the University. This patient was aged twenty-four, and was apparently suffering the extreme of human endurance with stone in the bladder. He decided for an operation because a neighbour labouring under the same affection had just died, and from whose bladder, after death, a large calculus was taken. So urgent were the symptoms in the present case that every preparation was hastened for relief. The warm bath, demulcent drinks, opiates, &c., were prescribed with little avail, for, on the night previous to the operation, he soiled the floor of his chamber with some six or eight small puddles of urine which he had spasmodically passed lying upon his abdomen.

When brought before the students on the morning of the 16th, they were told how unfavourable was the case for operating, yet how urgent the demand for it. Waiving every other consideration but the relief of the patient, the bi-lateral section was made into the bladder, but, owing to three circumstances, the operation was protracted for nearly an hour. We have the candour to

admit, it was badly performed. Chloroform did not act favourably; the opening in the prostate was not large enough for so voluminous a calculus; and having had my own forceps misplaced, and using too small a pair, the stone was crushed by the efforts at extraction. It is composed of phosphate of lime.

The patient gave hopes of doing well up to the third day, when, unfortunately, erysipelas invaded the whole scrotum, terminating in mortification, and his death on the sixth day after the operation. I was in the country, engaged with another case of lithotomy, when he died, and no *post-mortem* was made of the body.

CASE XXV.—During my winter sojourn at Nashville, I had several times been consulted by the friends of Colonel K., who was quite a sufferer from urinary calculus. He was a large, fleshy man, weighing over two hundred pounds; of excellent constitution; good health, previous to the present affection; of most exemplary habits; and I found him, the last of February (this year), urgent for an operation, to which he had been brought, as the last resource, for relief. The past summer, this patient thought he was deriving benefit from a newly-discovered spring in Tennessee, and was induced to believe the water was even dissolving the stone, as he passed several considerable fragments, seemingly the layers or concentric laminæ of a larger mass. At the time of the operation he had been confined not only to his room, but even to his bed, for several months. He had been out but once since October, and then only on account of an alarm that his house was on fire.

Colonel K. was now sixty-five years old, had experienced his present symptoms four or five years; been passing fragments of a urinary concretion for eight or nine months, and resorted constantly to the catheter to relieve retention. Notwithstanding his emaciation from intense suffering, he still presented a stout frame in a good constitution, and enjoyed a firm reliance in the Christian's hope. With the full understanding, on his part, that his case was an unfavourable one for operating; that we knew the stone was already broken up; that he was greatly reduced in strength and body, and yet was quite fat; that the season of the year was unpropitious; and that in the consultation of his five physicians, it was decided the prospects for life and death were equally balanced; lithotomy was performed. Such a prostate gland I hope never again to encounter. The bi-lateral section was, however, fairly made, but, from the size of this body, it was impossible to pass the finger beyond it, much less explore the bladder. With the scoop and forceps, several pieces, one much larger than the others, apparently the nucleus, of a considerable mass, were extracted. It is the triple phosphate.

The following extract from a letter of the patient's family physician, gives the subsequent history of this case:—

“*Lebanon, Tennessee, April 1, 1852.*”

“I remained with Colonel K. twenty-four hours after the operation, and everything seemed to promise well. He slept well, and passed his urine both through the wound and urethra. I left him full of hope that my much valued friend would recover and enjoy many years of health. I did not return to see him until the ninth day after the operation, but how changed his condition! * * * The wound was gangrenous; there was also a slough as large as a dollar on one of his nates, and another at the verge of the anus. He lingered till Tuesday morning.”

Remarks.—This patient, too, in all probability fell a victim to erysipelas;

at least we are left to infer as much. I believe, under the circumstances, I did my duty in operating in this case. He could not well have been brought to Nashville. Were it not for the immense size of the prostate gland, judged to be two and a-half inches in length by an inch thick, and his distance from the conveniences of a city, possibly lithotripsy might have relieved him.

In reference to the cause of breaking the stone while in the bladder, we know of no better explanation than that offered in the following quotation from Mr. South. He says, Sir Benjamin Brodie gives the history of a case, in which the patient, "having, for a considerable time, laboured under the symptoms of stone in the bladder, began to void by the urethra what had all the appearance of portions of a large calculus, broken down into fragments of various shapes and sizes. The number of these fragments at last amounted to more than two hundred, and now the discharge ceased, the symptoms at the same time subsided, and the patient being restored to perfect health. In this instance, the discharge of the fragments of the calculus was attributed to the use of certain mineral waters." Prout mentions a case, in which, however, the same happened without the patient using mineral waters or any kind of medicine; and Crosse speaks of numerous fragments which he obtained from a gentleman after a ride on horseback, as well also of twenty-two calculi removed after death, from a patient seventy years of age, which are of a very irregular shape, but admit of being so arranged as to form four regular and well-shaped calculi, each of the size of a pigeon's egg, which, with the appearances of the different surfaces, proves that the calculi had been broken in the bladder by knocking against each other under certain movements of the body. Other cases are also alluded to, and in the Museum of the Royal College of Surgeons there are several similar broken stones.

In my case it is more probable that the rough ride to the spring had more to do in breaking up the stone than drinking its waters had in its dissolution.

Recapitulation of the twenty-five Cases.

Sex.—23 were males, and 2 females.

Race.—2 were black, 2 mulattoes, and 21 white.

Age.—16 were under thirteen years, 7 between twenty and thirty-five, 1 at sixty-five, and 1 at seventy-seven.

Operation.—24 were cut, 23 of which by the double lithotome.

Result.—4 died after being operated upon, 3 of which from the operation, 2 indirectly (supervention of erysipelas), and only 1 directly from it. The remaining 21 fully recovered. Of the 19 first operated upon, but 1 died; and in that instance, death was not owing to lithotomy. 17 were well in two weeks after the bi-lateral operation. In no case have I heard of the reproduction of stone, nor has a fistula occurred in one.

Number of Calculi and their Chemical Constituents.—Single in twenty-two cases, 2 in one case, 3 in another, and 117 in another; total, 144 stones in

the twenty-five cases. Composition, chiefly some preparation of lime. There is not the usual proportion of the uric acid formation. Of the five specimens obtained in Tennessee, each contained lime; thus confirming Prof. Peters' analysis of the Dudlean collection of calculus at Lexington, Kentucky. It would seem from this collection that phosphate of lime is not as rare a composition of urinary concretions as is generally supposed.

My method of performing lithotomy is now submitted, but claiming for it nothing original.

It will be seen that decided preference is given to the bi-lateral operation of the late distinguished French surgeon, Dupuytren. I have found that owing to the irregularity of the external surface operated upon, it was difficult to make the crescent-like shape or the semi-circular incision through the skin and soft parts. I now make the cut like a **Λ**, with a short tail. The groove staff previously introduced into the bladder, and the scrotum elevated by an assistant; a short incision is made directly upon the raphe of the perineum at the bulb of the urethra, and the direction changed at a very oblique angle at the end of about three quarters of an inch, to terminate at a point midway between the anus and left tuberosity of the ischium. With the edge of the knife now turned upwards, it is made to penetrate and commence the other leg of the **Λ** at the point of the right side corresponding to the one just terminated upon the left. This incision is deepened as the instrument ascends, and arriving at the middle of the perineum with the edge turned directly upwards, the urethra is opened, and the groove of the staff exposed. This not only simplifies the external incision of lithotomy, but effectually guards against the liability to wound the rectum. The operation is then completed in the usual way.

The suggestions made in the *Southern Medical and Surgical Journal*, in 1849, in regard to the instruments, I expect to have carried out this summer while in Paris; and they may hereafter be presented to the profession.

AUGUSTA, Ga., April, 1852.



